Scott. II—48—10,315-27-1-16

P.W (1920) Department.

SERIES.

G.O. No. Mis 37 W

DATED 7—1—1920

C.J.B. 16/1/20

[Despatch Abstract.]

Bellary water supply scheme.

Sanctioning a supplemental estimate amounting to Rs.6,000/- for carrying out a further full power test in connection with the---

O.F.—29.

PUBLIC WORKS **DEPARTMENT.**

PUBLIC WORKS DEPARTMENT. Registered 13 8 W. K. S. C. No. A. Date 14 10 1919

Received 191 191

Subject. BELLARY WATER SUPPPLY FULL POWER TEST.

14 OCT 1919

ENCLOSURES No. 14 (as detailed in letter)

Spare copies .....

No. 853/y

Station M A D R A S., *Dated the* 14 OCTOBER 191

From (*Name*) R. F. STONEY, ESQUIRE,

(*Designation*) AG. SANITARY ENGINEER TO GOVT.

To The CHIEF ENGINEER, ~~Secretary to Government of Madras,~~

PUBLIC WORKS *Department.*

Sir,

With reference to G.O.No. 351 W dated 13th March 1918 sanctioning an estimate amounting to Rs. 31,500/- for the full power test in connection with the Bellary Water Supply Scheme, I have the honour to forward herewith the following documents and to state as under:—

¶¶3-4 infra (1) Copy of the report by the Deputy Sanitary Engineer Northern and Central Circles.

¶ 4-5 infra (2) copy of letter No. 428 dated 8-9-19 from the Assistant Sanitary Engineer, Central Circle.

¶ 6 infra (3) Section of second well as constructed.

¶¶ 7-9 infra (4) Report of the Director of King Institute, Guindy on the Analysis of water from both the wells.

¶¶ 10-11 infra (5) Hydraulic gradients and cones ~~curves~~ of depression.

(6) Recouvment tests of first well.

(7) Recoupment/of test second well.

(8) Pupulation Curve.

(9) Log Book file.

(10). Chart plans N.C.No. 40&41/19

(11). Contour plans N.C.42/19.

(12). Plan showing the result of field test during pumping in the surrounding wells and pits N.C.No. 43/19

(13). Plan showing the field tests for brackishness N.C. 44/19

(14). Estimate amounting to Rs. 6,000/- for further full power test with 2 months continuous pumping.

2. From the report it will be seen that both the wells for which the estimate was sanctioned have been sunk to the full depth in the very same positions as originally contemplated with the result that the first well yields 350 gallons per minute with a head of 4.8 ft. and the second well 700 gallons a minute with a head of 4.3 ft. giving a total of 1050 gallons a minute.

3. As already reported in my No. 67 G dated 16th January 1918 the supply required for Bellary at present for a population of 50,000 a+ 10 gallons per head per day is only 347 gallons per minute and as such the supply from both wells 1050 gallons a minute is more than sufficient for the requirements of the town.

4. Both the Deputy Sanitary Engineer, Northern and Centra Circles and the Assistant Sanitary Engineer, Central Circle are fully confident that there is no probability of our drawing brakish water into these wells owing to the very long distance between the affected area and the wells The deputy Sanitary Engineer suggests that it is advisable to pump for a longer total period and for several days at the rate of 24 hours per day to further test the cones of depression and the area affected by pumping.

5. I am of opinion that such a prolonged test is necessary and recommend that the estimate amounting to Rs. 6,000/- may be sanctioned as a supplemental estimate.

I have

I have the honour to be,

S i r,

Your most obedient servant,

Ag. Sanitary Engineer to Govt.

S.N./8-10-19.

Copy of report by the Deputy Sanitary Engineer, Northern and Central Circles:--

BELLARY WATER SUPPLY FULL POWER TEST

1. Pumping has been done from both wells in the Hagari river from 17th April to 18th June of this year. The tests were stopped then because of freshes in the river.

The rate of recuperation for No.1 well is 350 gallons a minute with a head of 4.8 feet and for No.2 well is 700 gallons a minute with a head of 4.3 feet giving a total of 1050 gallons a minute with a very fair working head.

2. No.2 well is situated nearer to the centre of the stream 300 feet from No.1 well. A third well will be included in the completed head works so that the quantity of water available need never be in doubt. For the present the design is for a population of 50,000 @ 10 gallons per head per day, equivalent to 521 gallons a minute with 16 hours pumping; only half the quantity available from the two wells already sunk.

3. Field tests for brackishness were made and observations of levels of the water in pits surrounding the wells and the area affected by the pumping is shown in N.C.No.42/19.

The worst water from the rather unreliable field test point of view is that of No.2 well itself where only 1 drop of

nitrate

nitrate was required to change the colour, but the proper chemical test only gives 11 parts of chlorine per 100,000, so that it cannot be considered in any way a brackish water. In appearance and taste the water of No. 2 well is superior to that of No. 1. Further pumping will no doubt improve the quality of water considerabl

4. As the area affected by the pumping is well within the non-brackish area shown in the original site plan, there is littl possibility that water can ever be drawn into the wells from the affected areas which are thousands of feet away.

5. In order however, to be on the safe side and to further test the cone of depression and the area affected by pumping, it may be advisable to pump for a longer total period and for severa days at the rate of 24 hours per day. This may be started in January next when a fair dry weather test can be made before the monsoon.

6. The amount of the original estimate for the full power tests was Rs. 31,500/- The expenditure to date is Rs. 30,476/- but this includes Rs. 4,597/- for value of tools and plant still retained at the work spot for further use if required.

Copy of letter No. 428 dated 8-9-1919 from T.S.Randhawa Esq., Assistant Sanitary Engineer, Central Circle to the Deputy Sanitary Engineer, Northern and Central Circles.

Re:- Bellary Water Supply Investigation.

I have the honour to report that the work sanctioned in G.O No.351 W dated 13th March 1918 has been completed Well has been constructed according to the sanctioned estimate as per plan attached-appendix I. Yield test was made and also the quality test.

The results of the investigation are enclosed in tables and chart, etc. Following are the enclosures

a. A plan showing well as constructed.

b. Table of yield test and recuperation test lasting for 44 days from 17-4-19 to 18-6-19 from well No. 1, i.e., the one already constructed--44 sheets.

c Table of yield test and recuperation test lasting for 44 days from 17-4-19 to 18-6-19 from well No. 2--44 sheets.

d. Recuperation curve for first well.
e. Recuperation curve for second well.
f. Population curve for Bellary town.

g. Two sheets showing Hydraulic gradients of the depression, during pumping of two wells and 23 sheets of tables giving the data of depression of water in pits surrounding the wells with the effect of pumping.

h. Plan showing the area affected with the pumping.

i. Tracing showing the comparative brackishness in pit and borehole surrounding the wells during the pumping test.

J. Tracing showing the comparative brackishness determined from boreholes when the wells had not been constructed, determined in the year 1911.

K. Graph showing total quantity of water pumped from each well every day and effect by this pumping on the water level in the wells, as well as showing the rainfall during the period -- 2 plans.

L. The report of Director King Institute on the quality of water in the two wells.

2. These results show that there is sufficient quantity of potable water available in this source to supply needs of Bellary town.

From one well 1,24,560 gallons were being pumped within 6 hours and from the other 2,57,525 gallons in 6 hours every day from 16-5-19 to 18-6-19. This did not make apparently any deterioration in the qualtiy of water, as far as brackishness is concerned.

But I beg to agree to your opinion expressed to me personally that it is very necessary that a continuous test lasing for a period say two months, without stopping pumping at all, by keeping a pumping plant spare to permit cleanings and repairs etc., before this source can finally be pronounced as proved satisfactory.

The water supply investigation should necessarily be carried in the spirit of scepticism of scientist all tests should be made before a case is held as a proved fact. For this purpose an amount of Rs. 6,000/- will be necessary.

(Sd) T.S. Randhawa
Asst Sanitary Engr
Central Circle.

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S.N./8-10-19.

Bellary water Supply Full power test. 6

C.P. 2138 W.K. From the San.l Eng.r to Govt No 853 G of 14.10

Wat-Sct A

D.J.

The Sanitary Engineer to Govt submits plans & an Estimate amou to Rs 6,000/- for carrying out a furthe full power test in connection with the Bellary water Supply Scheme and requests that it may be Sanctioned as supplem to the revised Estimate amou to Rs 31,500/- sanctioned in G.O No 351 W of 13.3.08. The full power test so far carried out s that a sufficient supply in quantity may be expected an the quality of the water so far obtained appears to be potabl But the Chief Engineer consider that further test is necessary to see if the water will always remai fresh as it is possible that continuous pumping may draw in brackish water. It is therefo proposed to pump from January continuously for say two month

Z

B

NOTES.

M

at 24 hours daily In
the expensiveness of the
Scheme, the Chief Engi
considers the further
a necessary precau
and recommends
Sanitary Engineer's pr
A draft order on the
is submitted which
be sent to Lt
Financial Sec
acceptance

B

JD

Thro' SB

SB
14/11/19
15/11/19

I-D

Funds of the cost of th
test connected with the Bella
Supply scheme should be r
the Municipal Council from
balance of minor sanitary gra
amounting to Rs 95000 in the han
Council. - vide para 2 of m
d 9-4-15 on page 4 of Gp
The extra cost of Rs 6000 in
proposal will also have to b
by the municipal Counci
on this point should issue
A para to this effect ha
been added to the draft

W.K 5213C
14-7-15

File e'

REGISTRARIAT
25 NOV 19
MUNICIPAL S

P.W.D No. 2138 WS 9-1
A
of 21-11-19.

(with a roll of plans)

(A note returned
C.E. No 2645 on 4-12-19)

BW
17-11-19
WN
17/11/19

S.

GBS

~~2~~ 6

Local and Municipal Dept

Secy

2nd para 2 of Memo No 1386-3 M dated 9-4
(2) on page 4 of G.O. No 811 M dated 27-5-1914
Govt permitted the utilization of the grant bal
of Rs 95,000 towards the expenditure on the
water supply scheme. This balance was
however reduced subsequently to Rs 45,000
as the Govt allowed the Council to repay the
loan of Rs 50,000 which it had raised in 1911-
for relief of Congestion — Vide para 3 of G
(S) No 827 M dated 11-5-'17 and the notes on
of the same G.O. The amount available
thus Rs 45000. The Council has already
asked to meet the original estimate if the
full power test viz Rs 31500 from this source
The excess of Rs 6000 now involved will
also be met from the same source. The draft
order may, it is submitted, be accepted in
this Department and the file passed on
to Financial. When the order is Com
municated to this Department with Co,
of notes, the Council will be asked to place
the additional amount of Rs 6000 at the
disposal of the P. W. D.

(V)
Memo 2209-1 M
20 3 18

(P)
Ltr R.O.O 7645-C
12-12-18

(Under a note of Secy)

File M-6066 B
12.12.18

10-12-18 10.12.18 11.12.18

Jail Dept

The draft may be accept
in Jail

PUBLIC WORKS DEPARTMENT.

24 12 19

C. No. 3 W. R. S. A.

DATE. 5-1-1920

27/12/19

29/12/19

PWD

Jail no 60664

30/12/19

PWD

5/1/20

5 JAN 1920

6.1.20.

7.1.20

Scott. II-10 (a)—14,622—8-3-19. (6)

PW DEPARTMEN

Bellary water Supply Scheme

Water Well

Sanct'n an Supplemental Estimate amtg to Rs 6000/- for carrying out a further full power test in connection with the —

READ AGAIN G.O. No. 351W, dated 13. 3. 1918 Z.

" " Q " " " 19

READ ALSO:—

C. No. 2138/Q/4 From the Sanct Engr. to Govt, No. 853 Dy, dated 14. 10. 19

Q Mil-Sct

" " " " " " " 19

" " " " " " " 19

ORDER.

No. 371W, dated 7—1— 19

Mrs

The Estimate amounting to Rs 6,000/- for carrying out a further full power test in connection with the Bellary water Supply Scheme is Sanctioned as supplemental to the revised Estimate amounting to Rs 31,500 Sanctioned in G.O No 351/W dy 13. 3. 18.

2. Orders in regard to the provision of funds will issue in the L&M Deptt.

SO
8/11/19

for JS

Z

To The Sanct Engr to Govt

with plans N.C. Nos 40, 41, 42, 43, 44 dy 12/20 Mds 14.11.19

+ Estes (Mrs 6-239-F) 19

A.G. Madras dy 10/20 dy 5/11/19

— L&M dept with notes dy 17/11/19

dy 12/20.